Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.   (Currently Amended)   A program information display device for displaying a scatter diagram by ~~plotting two~~ plotting three arbitrary attributes selected by the viewer from at least ~~two attributes~~three attributes relating to a program ~~on the~~on at least an X-axis, and a Y-axis, and disposing the program information at a position conforming to a first related value ~~about the~~about an X-axis ~~attribute and~~attribute, a second related value ~~about the~~about a Y-axis attribute and a third related value, comprising:

a program information ~~storing means~~storage;

a program information ~~processing means~~processor;

a program information display ~~means~~; and

an attribute input ~~means~~interface,

wherein the program information ~~storing means~~storage stores:

the program information, and

at least the first related value about the X-axis ~~attribute and~~attribute, the second related value about the Y-axis attribute and the third related value, each related value numerically expressing a respective degree of relation;

wherein the attribute input ~~means~~interface acquires a first attribute used as the X-axis of the scatter ~~diagram and~~diagram, a second attribute used as the Y-axis of the scatter diagram and a third attribute associated with the third related value;

wherein the program information ~~processing means~~processor acquires the first ~~attribute and~~attribute, the second attribute and the third attribute from the attribute

input ~~means~~interface, and also acquires the program information, the first related value about the first ~~attribute and~~attribute, the second related value about the second attribute and the third related value from the program information ~~storing means~~storage;

wherein the program information display ~~means~~acquires the program information, the first attribute, the second attribute, the third attribute, the first related value,~~about first attribute and~~ the second related value and the third related value ~~about second attribute~~from the program information ~~processing means~~processor, plots the first attribute and second attribute on the X-axis and the Y-axis of scatter diagram respectively, ~~and displays~~displays the program information at a position conforming to the first related value,~~about the first attribute and~~ the second related value ~~about the second attribute~~and the third related value of the scatter diagram and indicates the third attribute on the scatter diagram at the position; and

wherein the first related ~~value and~~value, the second related value and the third related value are acquired by using any one of a broadcast wave, a wired broadcast, wireless communications and wired communication.

2.   (Currently Amended) The program information display device of claim 1, wherein the program information display ~~means~~displays icons, in addition to the program information, in the scatter diagram disposed at a position conforming to the first related value about the X-axis and the second related value about the Y-axis of the control information.

3.   (Original) The program information display device of claim 1, wherein the attribute is information about program, and this information includes channel, on-air time, genre, and viewing rate.

4.   (Currently Amended) The program information display device of claim 1, wherein the program information stored in the program information ~~storing means~~storage includes thumbnail.

5.   (Currently Amended) The program information display device of claim 1,

wherein the attribute input ~~means~~ interface further acquires a display range of the first attribute and a display range of the second attribute, and

the program information display ~~means~~ further acquires the display range of the first attribute and the display range of the second attribute from the attribute input ~~means~~interface, plots the first attribute and the second attribute on the X-axis and Y-axis of the scatter diagram respectively, displays the display range of the X-axis in the display range of the first attribute, displays the display range of the Y-axis in the display range of the second attribute, and displays the program information at ~~a position~~ the position conforming to the first related value about the first attribute and the second related value about the second attribute of the scatter diagram.

6.   (Currently Amended) The program information display device of claim 1, further comprising:

a program information ~~eliminating means~~eliminator,

wherein the program information ~~storing means~~ storage stores at least one program information, and related value about at least the three attributes of the program information,

the attribute input ~~means~~ interface further acquires ~~third~~ a further attribute and limit value of ~~third~~ the further attribute as a threshold when displaying the program information in the scatter diagram,

the program information ~~eliminating means~~ eliminator acquires the ~~third~~ further attribute and the limit value of the ~~third~~ further attribute from the attribute input ~~means~~interface, acquires the program information and the related value about ~~at least~~ the three attributes and the further attribute of the program information from the program information ~~storing means~~storage, compares the related value about the ~~third~~ further attribute of the related value about ~~at least~~ the three attributes of the program information with the limit value of the ~~third~~ further attribute, eliminates the program information and related value about ~~at least~~ the three attributes of the program information when the related value about the ~~third~~ further attribute is less than the limit value of the ~~third~~ further attribute, and saves the program information and

related value about at least the three attributes of the program information when the related value about the third further attribute is not less than the limit value of the third further attribute, and

the program information processing means processor acquires the first attribute andattribute, the second attribute and the third attribute from the attribute input meansinterface, acquires the program information, the first related value about the first attribute andattribute, the second related value about the second attribute and the third related value among the program information and the related value about at least the three attributes of the program information saved in the program information eliminating meanseliminator, and thereby does not display the program information having the related value about the third further attribute less than the limit value of the third further attribute in the scatter diagram.

7.   (Currently Amended) The program information display device of claim 1, further comprising:

a program information number judging meansjudgment section,

wherein the program information number judging means judgment section acquires program information from the program information processing meansprocessor, judges the number of program information items, and sends the judged result to the program information processing meansprocessor, and

the program information processing meansprocessor acquires the judged result from the program information number judging meansjudgment section, determines the information quantity of program information to be sent to the program information display means on the basis of the judged result, and thereby changes the information quantity displaying the program information depending on the number of program information items displayed in the scatter diagram.

8.   (Currently Amended) The program information display device of claim 1, further comprising:

a program information number judging meansjudgment section,

wherein the program information number ~~judging means~~ judgment section judges the display range of program scatter diagram, and sends the judged result to the program information ~~processing means~~processor, and

the program information ~~processing means~~ processor acquires the judged result from the program information number judgment section~~judging means~~, determines the information quantity of program information to be sent to the program information display ~~means~~on the basis of the judged result, and thereby changes the information quantity displaying the program information depending on the number of program information items displayed in the scatter diagram.

9.   (Currently Amended) The program information display device of claim 1, further comprising:

a program information display size ~~setting means~~setter,

~~wherein the program information storing means stores at least one program information and related value about at least three attributes of the program information,~~

~~the attribute input means further acquires third attribute,~~

~~the program information processing means acquires the first attribute, the second attribute and the third attribute from the attribute input means, and acquires the program information, related value about the first attribute, related value about the second attribute, and related value about the third attribute from the program information storing means,~~

wherein the program information display size ~~setting means~~setter acquires the program information, the first attribute, the second attribute, the third attribute, the first related value about the first attribute, the second related value about the second attribute, and the third related value about the third attribute from the program information ~~processing means~~processor, and determines ~~the character~~a character display size setting value of program information to be displayed in the scatter diagram from the third related value about the third attribute, and

the program information display ~~means~~ acquires the program information, the first attribute, the second attribute, the first related value about the first attribute, the second related value about the second attribute, and the character display size setting value from the program information size ~~setting means~~setter, plots the first attribute and the second attribute on the X-axis and Y-axis of the scatter diagram respectively, and displays the program information in ~~the character~~a character size conforming to the display size setting value at ~~a position~~the position conforming to the first related value about the first attribute and the second related value about the second attribute of the program information.

10.   (Currently Amended) The program information display device of claim 1, further comprising:

a program information display size ~~setting means~~setter,

~~wherein the program information storing means stores at least one program information and related value about at least three attributes of the program information,~~

~~the attribute input means further acquires third attribute,~~

~~the program information processing means acquires the first attribute, second attribute and third attribute from the attribute input means, and acquires the program information, related value about the first attribute, related value about the second attribute, and related value about the third attribute from the program information storing means,~~

wherein the program information display size ~~setting means~~setter acquires the program information, the first attribute, the second attribute, the third attribute, the first related value about the first attribute, the second related value about the second attribute, and the third related value about the third attribute from the program information ~~processing means~~processor, and determines ~~the character~~a character display size setting value of program information to be displayed in the scatter diagram from the third related value about the third attribute, and

the program information display ~~means~~ acquires the program information, the first attribute, the second attribute, the first related value about the first attribute, and the second related value about the second attribute from the program information size setting ~~means~~ setter, plots the first attribute and second attribute on the X-axis and Y-axis of the scatter diagram respectively, and displays the program information in ~~the icon~~ an icon size conforming to the display size setting value at ~~a position~~ the position conforming to the first related value about the first attribute and the second related value about the second attribute of the program information.

11. (Currently Amended) The program information display device of claim 1, wherein the program information display ~~means~~ is three-dimensional program information display ~~means~~ for displaying in three dimensions,

~~the program information storing means stores at least one program information and related value about at least three attributes of the program information,~~

the attribute input ~~means~~ interface further acquires the third attribute as a Z-axis of a three-dimensional scatter diagram, and

~~the program information processing means acquires the first attribute, second attribute and third attribute from the attribute input means, and acquires the program information, related value about the first attribute of the program information, related value about the second attribute, and related value about the third attribute from the program information storing means, and~~

the three-dimensional program information display ~~means~~ acquires the program information, the first attribute, the second attribute, the third attribute, the first related value about the first attribute, the second related value about the second attribute, and the third related value about the third attribute from the program information ~~processing means~~ processor, plots the first attribute, the second attribute, and the third attribute on the X-axis, Y-axis, and Z-axis of the three-dimensional scatter diagram respectively, and displays the program information at ~~a position~~ the position conforming to the first related value about the first attribute, the second related value about the second attribute, and the third related value about the third attribute of the program information.

12.   (Currently Amended) The program information display device of claim 1, further comprising:

a channel ~~assigning means~~assigner,

wherein the program information ~~processing means~~ processor acquires the first attribute and the second attribute from the attribute input ~~means~~interface, and acquires the program information, the first related value about the first attribute of the program information, and the second related value about the second attribute from the program information ~~storing means~~storage,

the channel ~~assigning means~~assigner acquires the program information, the first related value about the first attribute of the program information, and the second related value about the second attribute from the program information ~~processing means~~processor, and determines virtual channels to be assigned in the program information from the related value,

the program information ~~processing means~~processor acquires the virtual channels from the channel ~~assigning means~~assigner, and

the program information display ~~means~~acquires the program information, the virtual channels of the program information, the first attribute, the second attribute, the first related value about the first attribute, and the second related value about the second attribute from the program information ~~processing means~~processor, plots the first attribute and the second attribute on the X-axis and Y-axis of the scatter diagram respectively, and displays the program information and the virtual channels at ~~a position~~ the position conforming to the first related value about the first attribute and the second related value about the second attribute.

13.   (Currently Amended) The program information display device of claim 12,

wherein the channel ~~assigning means~~assigner sums up the first related value about the first attribute of the program information and the second related value about the second attribute, and determines the virtual channel to be assigned in ~~the~~

ascending ~~an~~ ascending order or ~~the descending~~a descending order from the program
information of the highest sum.

14.   (Currently Amended) The program information display device of claim
12,

wherein the program information ~~processing means~~processor maintains ~~the~~
~~combination~~ a combination of program information and assigned virtual channels until
~~the specified~~ a specified condition is satisfied.

15.   (Currently Amended) The program information display device of claim
14,

wherein the program information ~~processing means~~processor maintains the
combination of program information and assigned virtual channels for a specific time.

16.   (Currently Amended) The program information display device of claim
14,

wherein the program information ~~processing means~~processor maintains the
combination of program information and assigned virtual channels until ~~the power~~ a
power is cut off.

17.   (Currently Amended) The program information display device of claim
14,

wherein the program information ~~processing means~~processor maintains the
combination of program information and assigned virtual channels by a specific
number.

18.   (Currently Amended) The program information display device of claim
14,

wherein the program information ~~processing means~~processor maintains the
combination of program information and assigned virtual channels until ~~the program~~ a
program corresponding to the program information is terminated.

19. (Currently Amended) The program information display device of claim 12,

wherein the attribute input ~~means~~ interface acquires ~~the same~~ a same channel as the virtual channel displayed in the program information display ~~means~~ when ~~the viewer~~ a viewer selects a program, and

the program information ~~processing means~~ processor acquires the channel from the attribute input ~~means~~ interface, acquires the specified channel corresponding to the virtual channel from the program information, and displays the program on the screen by using the specified channel.

20. (New) The program information display device of claim 1, wherein the third attribute is used as a Z-axis of the scatter diagram, and the program information display plots the third attribute on the Z-axis.

21. (New) The program information display device of claim 1, wherein the program information display indicates the third attribute by modifying an appearance of the displayed program information in accordance with the third related value.